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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/822,171	04/09/2004	Raphael Schlanger	01-396-C	2923

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EXAMINER

BELLINGER, JASON R

ART UNIT	PAPER NUMBER
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3617

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07/03/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/822,171

Applicant(s)

SCHLANGER, RAPHAEL

Examiner

Jason R. Bellinger

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 114 and 116-176 is/are pending in the application.
- 4a) Of the above claim(s) See Continuation Sheet is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 114, 116-129, 131, 134, 135, 141, 142, 150, 156, 161, 166-171 and 176 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continuation of Disposition of Claims: Claims withdrawn from consideration are 130,132,133,136-140,143-149,151-155,157-160,162-165 and 172-175.

Terminal Disclaimer

1. The terminal disclaimer filed on 20 July 2006 disclaiming the terminal portion of any patent granted on this application, which would extend beyond the expiration date of US Patent 6,899,401 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Objections

2. Withdrawn claims 130, 132-133, 136-140, 143-149, 151-155, 157-160, 162-165, and 172-175 are objected to because of the following informalities: These claims lack the proper status identifier according to Rule 1.121. These claims are currently listed as "previously presented"; however they should be listed as "withdrawn". These claims are still withdrawn from consideration, and have not otherwise been treated on the merits.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 114, 119-121, 123-129, 131, 134, 141-142, 150, 156, 161, 166-168, and 176 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson.

Wilson shows a wheel having a peripheral wheel rim **B**, and a central hub **A** having a central axle and outer flange **F**. A plurality of spokes **D** extend between the rim

B and hub **A**, with the spokes having a first portion connected to the rim **B** and a second portion opposed to the first portion and connected to the hub **A**. A cavity is formed within the flange **F** for connection with at least one of the spokes **D**.

A second portion of the spoke **D** is joined to the outer flange **F** by means of a deformed engagement, wherein the spoke **D** deforms the cavity. The deformed engagement results in a connection that resists relative movement between the cavity and the second portion of the spoke **D** in the engagement region. The cavity is in a polymeric material that includes reinforcement fibers (namely the hub flange **F**). The deformed engagement region is entirely within the cavity, and the flange **F** includes a plurality of deformed engagement regions (namely, one for each spoke **D**). This deformed engagement extends along the longitudinal axis of the spoke **D**.

The second portion of the spokes **D** is coupled to the flange by an interference fit, and is joined to the cavity to maintain the cavity in a deformed condition. The second portion of the spoke **D** is of a material with a hardness greater than that of the cavity (due to the fact that the spokes are formed from a metal, while the cavity is formed in an outer flange that is formed from a reinforced polymer; see column 3, lines 31-34). The deformed engagement region includes contact between the spoke **D** and the cavity around the full cross-sectional perimeter of the spoke **D**.

The cavity is a blind cavity having at least one open end, closed longitudinal sides, and a closed bottom (that provides a longitudinal depth stop for the spoke). The deformed engagement includes elastic deformation (namely the cavity elastically deforms around the spoke **D** as it is threaded into the flange **F**).

The spoke **D** includes a configured surface, namely including helical threads in the deformed engagement region, and thus resists being pulled out of the cavity from plastic and elastic deformation. The spokes **D** are formed is a generally straight span portion that extends between the flange **F** and the rim **B**. This spoke span portion has a longitudinal axis that is aligned generally collinear with the longitudinal axis of the deformed engagement region.

The cavity includes at least one open end and at least one longitudinal sidewall surface. The deformed engagement extends longitudinally, and is continuous across the longitudinal sidewall surface of the cavity. The longitudinal distance of the cavity is greater than the cross-sectional thickness of the spoke **D**. The engagement region has a longitudinal depth that is at least 2x greater than the cross-sectional thickness of the spoke **D**. The spoke **D** may be disassembled from, and reassembled to, the cavity without damaging the cavity.

Multiple deformed engagement regions correspond to multiple cavities, due to the presence of multiple spokes **D**. The deformed engagement region in the cavity provides a "firm" connection between the spoke **D** and the flange **F**.

Wilson does not specify that the spokes are pre-tensioned. It is well known in the art that tension spokes wheels are constructed by securing spokes first to either a rim of a hub, and then connecting the spokes to the hub or rim (dependent upon which element the spokes were connected to first). It is well known in the art to pre-tension the spokes when attaching the spokes to the first element (i.e. the rim or hub). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to

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pre-tension the spokes of Wilson in order to equalize the forces of the wheel during construction. Furthermore, when spokes are connected between a hub and rim, some amount of tension is introduced into the spokes prior to the completion of the connection therebetween. Therefore, all spokes receive some form of "pre-tension" during assembly.

Wilson also does not state that the cavity is preformed. It is well known in the art to perform spoke attachment cavities in a hub or rim in order to reduce the effort required to thread (or secure) the spokes to the rim or hub. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to preform the cavities in the hub flange of Wilson for the reason set forth immediately above.

5. Claims 116-118 rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson as applied to claims 114, 120-121, 123-129, 131, 134, 141-142, 150, 156, 161, 166-168, and 176 above, and further in view of Lacombe et al. Wilson does not show the wheel including means to pretension to spoke and/or selectively adjusting the pretension of the spoke.

In Figure 1, Lacombe et al teaches the use of a spoke 1 having a tension adjustment device 5 located at one end of a spoke; this tension adjustment means 5 being capable of selectively adjusting pre-tension in the spoke 1. The device includes threadable adjustment means (6-7).

Therefore from this teaching, it would have been obvious to one of ordinary skill at the time of the invention to provide Wilson with a spoke having a tension adjustment

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device at the rim connection end of the spoke in order to allow for adjustment of the tension of the spokes. This would allow all the spokes to be adjusted to provide a balanced wheel, which would have an increased life and superior ride over an unbalanced wheel.

6. Claims 122 and 135 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson as applied to claims 114, 120-121, 123-129, 131, 134, 141-142, 150, 156, 161, 166-168, and 176 above, and further in view of Thompson, Jr. Wilson does not disclose that the hub (in which the cavity is located) is formed of a thermoplastic material.

Thompson, Jr. teaches the use of a bicycle hub made from a thermoplastic polymeric material. Therefore from this teaching, it would have been obvious to one of ordinary skill at the time of the invention to provide Wilson with a hub made from a thermoplastic polymeric material, as a substitution of equivalent polymeric materials, dependent upon cost and availability.

The spokes *D* of Wilson as modified by Thompson, Jr. would then cause plastic deformation when threaded into the cavities in the flange *F*.

7. Claims 169-171 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson as applied to claims 114, 120-121, 123-129, 131, 134, 141-142, 150, 156, 161, 166-168, and 176 above, and further in view of Watson. Wilson does not show the deformed engagement region extending obliquely and are radially offset from the

central axial axis of the axle, wherein the deformed engagement region extends through an imaginary radial line perpendicular to the axial central axis of the hub, and perpendicular to a longitudinal axis of the cavity.

Watson teaches the use of a hub 12 having spoke engagement regions 29 that cross over each other in axial plan view and in "close" proximity of each other at an angle of less than 180 degrees. These engagement regions 29 extend obliquely, and are radially offset from the central axial axis of an axle 14, wherein the engagement regions 29 extend through an imaginary radial line perpendicular to the axial central axis of the hub 12, and perpendicular to a longitudinal axis of the spoke mounting cavities 20.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to arrange the deformed engagement regions of the wheel of Wilson in the manner taught by Watson, as a substitution of equivalent spoke mounting arrangement, dependent upon the type of application in which the wheel would be used, and to further reinforce the hub by having the spoke ends overlap each other in the axial direction of the hub.

Response to Arguments

8. Applicant's arguments filed 20 July 2006 have been fully considered but they are not persuasive. The Applicant argues that Wilson does not have a deformed engagement between the hub flange and the spoke. Given the fact that the hub flanges of Wilson are formed from a fiber reinforced rubber material, there will be some amount

of deformation when a metal spoke is threaded therein, regardless of whether a pre-threaded hole exists.

The Applicant's argument that Figure 5 of Wilson does not show a deformed connection between a hub flange and a spoke is moot, given the fact that this figure was clearly not relied upon in the rejection.

The Applicant argues that Wilson is not a tension spoke wheel, but instead is a compression spoke wheel. However, it should be noted that the Wilson reference is classified in class 301 subclass 59, which pertains to the hub and spoke connection of tension spoke wheels.

The Applicant argues that since Wilson does not show means to adjust the tension of the spokes, it must be a compression wheel. First, it should be noted that Lacombe et al was used to teach the structure of the claimed tension adjustment means. Second, the depth to which the spokes are threaded into the hub flanges would serve as an initial means to adjust the tension of the spokes.

The Applicant also argues that Wilson shows no head or swivel at the rim and spoke connection, and that it is "reasonable to assume" that the spoke cannot be turned to adjust the engagement between the spoke and hub flange. First, it should be noted that the hub and spoke connection is the main aspect of Wilson's invention, and thus the rim shown is only an example. Furthermore, Lacombe et al was used to teach the tension adjustment features. The Applicant is further reminded that the rejection is based upon the knowledge of one of ordinary skill in the art *at the time of the invention*, and not at the time of the references.

The Applicant's argument that if the locknuts were intended as the adjustable means, then the nuts would be spaced away from the hub flange is supposition, since Figure 2 could be interpreted as the tension adjustment to the spokes having already been performed.

The Applicant also argues that Wilson would require a gap at the spoke's radially inboard end to allow for tension adjustment. However, since the hub flanges of Wilson are formed of a resilient material (i.e. fiber reinforced rubber), no gap would be required, since the spoke could be threaded deeper into the flange if required.

9. In response to applicant's argument based upon the age of the references, contentions that the reference patents are old are not impressive absent a showing that the art tried and failed to solve the same problem notwithstanding its presumed knowledge of the references. See *In re Wright*, 569 F.2d 1124, 193 USPQ 332 (CCPA 1977).

Again, the Applicant is further reminded that the rejection is based upon the knowledge of one of ordinary skill in the art *at the time of the invention*, and not at the time of the references.

10. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was

within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

11. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the Applicant argues that there is no motive to combine the Wilson and Thompson references, since Thompson does not show a longitudinal connection between the spoke and hub. First, it should be noted that the references were not literally combined; Thompson was only used to teach the use of a fiber reinforced plastic material. Second, Wilson contains the structure of the claims.

The Applicant also argues that there is no motive to combine the Wilson and Watson references, since Watson does not show a longitudinal engagement between the spoke and the hub flange. First, the references were not literally combined; Watson was only used to teach the crossover region type of spoke connections. Wilson shows the longitudinal engagement.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason R. Bellinger whose telephone number is 571-272-6680. The examiner can normally be reached on Mon - Thurs (9:00-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Morano can be reached on 571-272-6684. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jason R Bellinger
Primary Examiner
Art Unit 3617

A handwritten signature in black ink, appearing to read 'JRB', is written over the printed name and title of the examiner.